HP StorageWorks

4000/6000/8000 Enterprise Virtual Array connectivity for IBM AIX installation and reference guide

4000/6000/8000 Enterprise Virtual Array connectivity for IBM AIX installation and reference guide

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About this guide

This installation and reference guide provides information to help you:

- Connect your host to an Enterprise Virtual Array storage system

- Get pointers to the latest layered applications used with the Enterprise Virtual Array

"About this guide" topics include:

- Overview

- Getting help

Overview

- Intended audience
- Related documentation
- Conventions

Intended audience

This guide is intended for use by storage administrators who are experienced with the following:

- Host environments, such as Windows® 2000, Windows NT® , Windows Server 2003, Sun Solaris, OpenVMS, Tru64 UNIX®, HP-UX, IBM AIX, Linux®, Novell NetWare

- Enterprise Virtual Array (4000/6000/8000) storage systems

Related documentation

In addition to this guide, HP provides the following corresponding information:

- *HP StorageWorks 4000/6000/8000 Enterprise Virtual Array connectivity for IBM AIX release notes*

- *HP StorageWorks Storage System Scripting utility reference guide*

- *HP StorageWorks Interactive Help for Command View EVA*

Conventions

Conventions consist of the following:

- Document conventions
- Text symbols

Document conventions

This document follows the conventions in Table 1.

Table 1 Document conventions

Convention	Element
Medium blue text: Figure 1	Cross-reference links and e-mail
Medium blue, underlined text (http://www.hp.com)	Web site addresses
Bold font	• Key names • Text typed into a GUI element, such as into a box • GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
Italics font	Text emphasis
`Monospace font`	• File and directory names • System output • Code • Text typed at the command-line
`Monospace, italic font`	• Code variables • Command-line variables
`Monospace, bold font`	Emphasis of file and directory names, system output, code, and text typed at the command line

Text symbols

The following symbols may be found in the text of this guide. They have the following meanings:

> **CAUTION:**
> Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

> **NOTE:**
> Text set off in this manner presents commentary, sidelights, or interesting points of information.

Getting help

If you still have a question after reading this guide, contact an HP authorized service provider or access our web site: http://www.hp.com.

HP technical support

Telephone numbers for worldwide technical support are listed on the following HP web site: http://www.hp.com/support/. From this web site, select the country of origin.

> **NOTE:**
> For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Storage web site

The HP web site has the latest information on this product, as well as the latest drivers. Access storage at: http://www.hp.com/country/us/eng/prodserv/storage.html. From this web site, select the appropriate product or solution.

HP authorized reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the HP web site for locations and telephone numbers: http://www.hp.com.

1 Host connectivity

This chapter provides host connectivity information and links to components you need to support your operating system with an Enterprise Virtual Array storage system. It is important that you use the topics in this chapter in the following order:

- Installing the Fibre Channel adapter
- Accessing IBM AIX utilities
- Installing multipathing
- Using the Storage System Scripting utility

Installing the Fibre Channel adapter

Supported Fibre Channel adapters must be installed in the host server in order to communicate with the Enterprise Virtual Array.

> **NOTE:**
> Traditionally, the adapter used to connect the host server to the fabric is called a host bus adapter (HBA). The server HBA used with the Enterprise Virtual Array is called a Fibre Channel adapter (FCA). You may also see the adapter referred to as a Fibre Channel host bus adapter (FC HBA) in other related documents.

Follow the hardware installation rules and conventions for your server type. The Fibre Channel adapter is shipped by the manufacturer with its own documentation for installation. Refer to the manufacturer's documentation for complete instructions.

You need the following items to begin:

- FCA boards, drivers, and the installation instructions provided by the manufacturer
- The server's hardware manual for instructions on installing adapters
- Appropriate tools to service your server

The FCA board plugs into a standard PCI or PCI-X slot in the host server. Refer to the hardware manual for instructions on plugging in boards.

Accessing IBM AIX utilities

You can access IBM AIX utilities such as the Object Data Manager (ODM), at the following web site:

http://h18006.www1.hp.com/storage/saninfrastructure.html.

Operating system multipathing

Multipathing provides a multiple-path environment for your operating system. More information about multipathing is available the following web site

http://h18006.www1.hp.com/products/sanworks/multipathoptions/index.html.

HP StorageWorks Command View EVA and the Storage System Scripting utility

The Storage System Scripting utility (SSSU) is delivered as part of HP StorageWorks Command View EVA. The SSSU is a command line interface (CLI) that issues commands directly to the controller. You can locate HP StorageWorks Command View EVA including the SSSU at the following web site: http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html.

Working with clusters

Clustering is connecting two or more computers together in such a way that they behave like a single computer. Clustering is used for parallel processing, load balancing, and fault tolerance.

The supported clustering software for IBM AIX is High Availability Cluster Multi-Processing (HACMP). See the operating system-specific release notes for the specific version of the supported clustering software.

Be sure to install operating system-specific FCAs on each server in the cluster. Refer to the documentation that came with the clustering software for more specific information

2 Testing connections to the Enterprise Virtual Array

This chapter describes how to test connections between the operating system host server and the Enterprise Virtual Array. Virtual disks are set up and presented to your host server in order to test the connectivity and to begin using the disks. Topics in this chapter include the following:

- Adding hosts
- Creating and presenting virtual disks
- Verifying virtual disks from the host
- Configuring virtual disks from the host

Adding hosts

You can add a host using Command View EVA. You need to add each FCA installed in the host system in order for the host to work with the Enterprise Virtual Array by performing the following procedure:

1. Collect information on World Wide Names (WWNs) for each FCA on your server. You need this information when choosing the host FCAs in Command View EVA.

> **NOTE:**
> Adding hosts through the Command view EVA software consists of adding each FCA adapter installed in the host. When you add the first adapter, you use the Add Host function, but when you add subsequent adapters, you use the Add Port function. Ensure that you add a port for each active FCA.

Gather the following information:

a. Determine the active FCAs on the IBM AIX host by entering the following command:

```
# lsdev –Cc adapter |grep fcs
```

The following output is displayed:

```
fcs0     Available 1H-08    FC Adapter
fcs1     Available 1V-08    FC Adapter

# lscfg -vl fcs0
  fcs0            U0.1-P1-I5/Q1  FC Adapter

        Part Number.................80P4543
        EC Level....................A
        Serial Number...............1F4280A419
        Manufacturer................001F
        Feature Code/Marketing ID...280B
        FRU Number..................   80P4544
        Device Specific.(ZM)........3
        Network Address.............10000000C940F529
        ROS Level and ID............02881914
        Device Specific.(Z0)........1001206D
        Device Specific.(Z1)........00000000
        Device Specific.(Z2)........00000000
        Device Specific.(Z3)........03000909
```

```
Device Specific.(Z4)........FF801315
Device Specific.(Z5)........02881914
Device Specific.(Z6)........06831914
Device Specific.(Z7)........07831914
Device Specific.(Z8)........20000000C940F529
Device Specific.(Z9)........TS1.90A4
Device Specific.(ZA)........T1D1.90A4
Device Specific.(ZB)........T2D1.90A4
Device Specific.(YL)........U0.1-P1-I5/Q1b.
```

    b.   Select the network address for the port WWN.

2. Add the host using Command View EVA.

3. Ensure that the host FCAs have been added by inspecting the Host folder in the Navigation tree of Command View EVA.

NOTE:

Set the host type to IBM AIX.

Creating and presenting virtual disks

Use the following procedure to create and present additional virtual disks to the host servers

1. Create a virtual disk on the Enterprise Virtual Array using Command View EVA.

2. Set values for the following parameters:

- Virtual disk name
- Vraid level
- Size
- Present to host (the host you just created)

The following two values must be set as indicated:

- OS Unit ID should be set to 0.
- Preferred path/mode should be set to `No Preference`.

3. Select a LUN number if you chose a specific LUN on the Virtual Disk Properties page.

4. Restart the server or Rescan the bus.

NOTE:

There is a field on the Virtual Disk properties page for OS Unit ID. Set the OS Unit ID to zero for IBM AIX hosts.

Verifying virtual disks from the host

This section describes how to verify that operating system hosts can access the virtual disks created on the Enterprise Virtual Array with Command View EVA. The host can recognize Enterprise Virtual Array devices either through a system restart or by rescanning the bus

Scanning the bus

Use the following procedure for the host to recognize virtual disks presented after the initial program load (IPL):

1. Execute the following command:
   ```
   cfgmgr -v
   ```

   The `cfgmgr` command rescans the bus for additional resources. The `-v` switch (verbose output) requests a full output.

2. Execute the following command:
   ```
   lsdev -Cc disk
   ```

   The `lsdev` command lists all the Enterprise Virtual Array devices. The output should look similar to the following:

   ```
   hdisk1  Available 1V-08-01     HP HSV210 Enterprise Virtual Array
   hdisk2  Available 1V-08-01     HP HSV210 Enterprise Virtual Array
   hdisk3  Available 1V-08-01     HP HSV210 Enterprise Virtual Array
   ```

If you are unable to access the virtual disk, check the following:

- Verify all cabling to the switch, Enterprise Virtual Array, and host.

- Verify all firmware levels (check the Enterprise Virtual Array QuickSpecs and associated release notes for details).

- Ensure that you are running a supported version of the host operating system. For more information, see the host specific release notes.

- Ensure that IBM AIX is selected as the operating system for the virtual disk in Command View EVA.

Configuring virtual disks from the host

After you have set up the virtual disks on the Enterprise Virtual Array and have rescanned or restarted the host, you need to follow the host-specific conventions for configuring these new disk resources. Refer to the documentation that came with your server for specific instructions on setting up disk resources.

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